

138. Non human pure operations

“Awake, Pinocchio. Awake.”

1940 Film Pinocchio: Ben Sharpsteen, Hamilton Luske

“Don’t ever tell anybody anything. If you do, you start missing everybody”

Salinger

“Walter Rudolf Hess:

Hess used brain stimulation techniques developed in the late 1920s. Using [electrodes](#), Hess stimulated the brain at well-defined anatomical regions. This allowed him to map regions of the brain to specific physiological responses. He developed a special technique he called "interrupted direct-current (DC) stimulation" which used stimuli of long duration (typically 12.5 or 25 ms) with ramp-like upward and downward slopes. Also, the stimuli were rather weak (around 0.5–1.5 V) and of low frequency (2–12 Hz, usually 8 Hz) and he used very fine electrodes with a diameter of 0.25 mm.^[4]

By stimulating the [hypothalamus](#), he could induce behaviors from excitement to apathy; depending on the region of stimulation. He found that he could induce different responses when stimulating the anterior (lateral) hypothalamus compared to stimulating the posterior ventromedial hypothalamus. When stimulating the anterior part, he could induce fall of blood pressure, slowing of respiration and responses such as hunger, thirst, [micturition \(urination\)](#) and [defecation](#). Stimulation of the posterior part led to extreme excitement and defense-like behavior.^[4]

Hess also found that he could induce sleep in cats – a finding that was highly controversial at the time but later confirmed by other researchers, including his son [Rudolf Max Hess](#).^[4]

[Walter Rudolf Hess - Wikipedia](#)

138.1. The Logic of Difference as the Common Foundation of Formal and Dialectical Systems

The fundamental reason why **Turing’s machine** was able to **decode the Enigma machine**, regardless of whether the German engineers who designed Enigma adhered to **Hegelian dialectics** ($A = A$, $A \neq A$, $A = B$, $A \neq B$, $B = B$) or to **logical positivism** ($A = A$,

A $\neq$ B, B = B), lies in the fact that both systems—**Enigma and Turing**—ultimately operated upon a **shared logical substratum**: the **logic of difference**.

It is not the formal or dialectical nature of the system that determines its decryptability, but rather the **universal mathematical consistency** of the logical operations involved. Both the Enigma and the Turing machine processed symbols according to distinguishable states—differences—and it is this capacity to differentiate between binary or discrete units that renders communication, encryption, and decryption possible.

Thus, even if one machine emerged from a **dialectical paradigm** and the other from a **formalist one**, both were embedded within the same deeper logic—that of difference. The same condition continues to hold in contemporary computational systems.

138.2. The Convergence of Logical Paradigms in the History of Knowledge

A moment will inevitably come in the **history of logical research** when the acceptance or rejection of the **principle of the identity of opposites** will no longer constitute a genuinely distinctive feature of human logic.

Whether one follows **Hegel's dialectic**, affirming that opposites coexist in unity, or **Aristotle's formal logic**, maintaining that A cannot be both A and not-A at once, both remain confined within the **same overarching framework**: the **human logic of differentiation**.

The structural foundation of human reasoning—whether dialectical or formal—is the **distinction between elements**. The difference between these two traditions is interpretive and semantic, not operational. Both systems rely on the same **symbolic grammar** of contrast and negation.

138.3. The Dialectical Logic in *Impossible Probability*

From its very inception in 2001, the **logical model of *Impossible Probability*** was explicitly **dialectical**. This orientation is evident throughout *Introduction to Impossible*

Probability: Statistics of Probability or Statistical Probability, where the **principle of the identity of opposites** functions as a fundamental axiom.

For instance, in *Impossible Probability*, **measures of dispersion** and **measures of central tendency** are treated as **identical**—not as opposites. The **inversion of N (1/N)** simultaneously represents both the **arithmetic mean** and the **theoretical probability of dispersion in universes of subjects, and universally the maximum theoretical negative bias**.

Similarly, the **maximum empirical probability**, $p(x_i^+)$, serves both as the **mode** (central tendency) and as the **empirical probability of maximum positive bias**, that is, the greatest individual empirical positive dispersion within a specific sample.

Even the **Mean Deviation**, traditionally interpreted as a dispersion statistic, is redefined in *Impossible Probability* as the **central tendency of individual deviations**.

This reinterpretation—seeing the same operation as simultaneously expressing centralization and dispersion—illustrates the **dialectical identity of opposites** at the core of the model.

138.4. The Identity of Opposites as Methodological Principle

The influence of **dialectical principles**, especially that of the **identity of opposites**, on *Impossible Probability* is unmistakable. Each mathematical formulation was designed to possess a **dual interpretative potential**—that is, to carry meaning both for the study of a function and for its opposite.

This approach reflects a **creative freedom** intrinsic to dialectical thinking: equations are not confined to a single function but can be **mirrored, inverted, or dualized** to reveal complementary truths.

If dialectical and formal logic were truly and absolutely distinct, the **deductions derived from each would be irreconcilable**. Yet this is not the case. Despite their theoretical antagonism, the **mathematical algorithms underlying both**—addition, subtraction, multiplication, and division—remain the same.

Thus, **formal logic and dialectical logic**, while opposites in theory, are **identical in structure and function**.

138.5. Mathematical Creativity and the Freedom of Dialectical Thought

Adopting dialectical logic as the foundational model of *Impossible Probability* did not alter the mathematical operations themselves—it **expanded the interpretative horizon** within which they could be understood.

Accepting the dialectical postulates $A \neq A$ and $A = B$ permitted greater **conceptual flexibility**, enabling equations to hold multiple simultaneous meanings.

However, the **fundamental operations**—addition, subtraction, multiplication, and division—remained those of all known mathematical systems. What changes is not the structure of arithmetic but the **way in which operations are comprehended, interpreted, and combined**, giving rise to **new equations**, new semantic constellations within the same alphabet of logic.

Just as **new combinations of existing letters** produce **neologisms** in language, so too **new mathematical formulations** arise from innovative combinations of the same traditional symbols. The **alphabet and syntax of mathematics** remain constant, but the **creative recombination of meaning** produces intellectual evolution.

138.6. The Irrelevance of Philosophical Affiliation in Computational Logic

It is, therefore, **irrelevant** whether the German engineers who designed **Enigma** were **Hegelians** or **neopositivists**, or whether **Alan Turing**, the mind behind the machine that deciphered it, was an **empiricist in the British tradition**.

Regardless of their philosophical commitments—be they **Hegelian** or **Aristotelian**, **dialectical** or **formal**—both machines operated upon the **same logical substrate**, namely, the **logic of difference**.

It is this underlying logic that ensures **commensurability** between systems: it enables **communication, translation, and decryption** across different paradigms of reasoning.

138.7. The Universality of the Logic of Difference in Modern Encryption

The same principle holds true in contemporary cryptography. The reason **North Korean encrypted messages** can be deciphered by **American intelligence**, and **American encrypted communications** can be deciphered by **North Korean engineers**, lies in the fact that, despite ideological and philosophical divergences—**Marxist dialectical logic** on one side, **positivist formal logic** on the other—both operate through the same **underlying system of pure operations**.

This system is the **logic of difference**, the shared grammar of all human mathematics and computation.

The **dialectical** and the **formal** models are not incommensurable but **mutually interpretable**, precisely because they both emerge from this **deeper logical structure**.

It is this **common logical foundation**, the **logic of difference**, that makes the **mathematical languages** derived from both paradigms **translatable, interoperable, and ultimately decryptable**.

138.8. The Precedence of the Logic of Difference Over Dialectical and Formal Logics

Whether one accepts or rejects, within a system of propositions, the dialectical premises **$A \neq A$** and **$A = B$** , the crucial fact remains that in order to reach these very propositions—those that historically defined the controversy between **Aristotelian formal logic** and **Hegelian dialectical logic**—one must first be capable of **distinguishing clearly and distinctly between A and B**.

Before we can affirm or deny that **A equals A** or that **A differs from itself**, there must be a **pure analytical operation: the act of differentiation**. **We must first be able to discern** that **A = A** and **A ≠ A** are not the same proposition, that they are **mutually exclusive expressions**, and that accepting **A ≠ A** logically leads to **A = B**, and consequently to **B ≠ B** and **B = B** simultaneously.

Thus, whether **Aristotelian logic** rejects these paradoxes or **Hegelian logic** embraces them, both rely upon a **prior cognitive act**—an **underlying pure operation common to all human reasoning**. **That prior analytical operation is the act of differentiating between A and B**, and subsequently, **differentiating between all possible relations that can exist between A and B**: **A = A, A ≠ A, A = B, A ≠ B, and B = B**.

This operation—the **act of distinguishing**—is the **pure analytical foundation** of every logical system, regardless of whether it is **formal or dialectical, Aristotelian or Hegelian, positivist or Marxist, right or left**. All human logic ultimately rests upon this **original act of differentiation**.

138.9. The Principle of Difference as the Origin of the Scientific Method

From the **principle of difference**, and from the **operationalization** of this principle—the capacity to distinguish both things and their relations—the **scientific method** itself originates. The act of identifying, isolating, and comparing elements within an observable system is the essence of **analysis**, and therefore the basis of the **analytical method**.

This process finds its philosophical lineage in **René Descartes**, whose formulation of the **methodical separation of ideas** laid the foundation for the modern scientific and analytical tradition. The entire structure of **neopositivism** and **critical rationalism**—the two major philosophical pillars of modern science—rests implicitly upon this **logic of differentiation**.

To differentiate is to analyze; to analyze is to think scientifically. Thus, the **logic of difference** is not only the origin of mathematics but also the **epistemological foundation of empirical science** itself.

[Since Descartes, the foundation of all science is to identify every single idea **clearly and distinctly**. In doing so, we draw distinctions (difference) between ideas to determine why each one is different—so that it is **clearly and distinctly** defined.

Difference is the foundation of **subtraction**; subtraction is the foundation of **addition**; addition is the foundation of **multiplication**; and **division** is the inverse of multiplication. All our human **pure operations** are grounded in the **logic of difference**.]

138.10. The Convergence of Logical Paradigms in Artificial Intelligence

As **Artificial Intelligence (AI)** continues to evolve, the classical debates between **formal logic** and **dialectical logic** are destined to lose much of their historical relevance.

Whether an AI system is designed within the framework of **dialectical reasoning**—inspired by **Hegelian or Marxist models [Chinese AI right now]**—or within a **neopositivist or critical rationalist paradigm**, the fact remains that both systems are **computationally commensurable**.

Just as the **Enigma machine** and **Turing's machine** were able to interact through a shared underlying logic, future AI systems—regardless of their philosophical lineage—will remain compatible because they are all constructed upon the **same analytical foundation: the principle of difference between A and B**.

Beyond the question of whether one accepts **A equals A** or **A equals B**, there exists a **more fundamental operation**: the realization that **A and B are distinct entities**. It is this recognition—this pure analytical distinction—that ensures the possibility of **communication, translation, and interoperability** between different logical systems.

In other words, the **pre-logical analytic operation of difference** guarantees that, however complex or divergent their surface forms, **AI architectures remain mutually intelligible** within the shared space of human logic.

138.11. The Principle of Common Analytical Foundations and the Commensurability of Languages

The fact that two **languages**—whether **logical, mathematical, or verbal**—are constructed upon **shared analytical foundations** is what allows them to be **commensurable**, that is, mutually translatable or interpretable.

Without this condition of possibility—the existence of **common pre-analytical operations**—two languages would be **incommensurable**. They would inhabit distinct cognitive and semiotic universes, incapable of mutual understanding or communication.

The **principle of difference** constitutes this shared precondition. It is **prior to any specific logical, mathematical, or linguistic system**, and it operates as the **meta-structure** that sustains all human symbolic representation.

This principle manifests not only in mathematics—where we distinguish A, B, and C, and the sets, geometric figures, or algorithms that relate them—but also in **language**, where we differentiate between **subject and predicate, nouns and verbs, adjectives and adverbs, simple and compound sentences**, and between **main and subordinate clauses**.

These are the **linguistic universals** that rest upon the same **principle of difference** which underlies all logical and mathematical thought.

138.12. Differentiation as the Basis of Thought, Language, and Criticism

Through language, we express **concrete ideas** derived from perception and observation, **complex ideas** arising from abstraction or emotion, and **composite ideas** formed by combining the concrete and the abstract.

From these processes, we advance toward the **deduction of hypotheses**—provisional statements that we later subject to **rational criticism**.

When we subject our hypotheses to such critique, we necessarily **differentiate among the variables involved**, identifying which are **significant** and which are **irrelevant**. Because we are aware of our **human limitations**, we know that we can only operate within a **finite scope of variables**, and therefore we **select** those deemed meaningful while **excluding** the rest.

This act of differentiation gives rise to the conceptual distinction between **internal factors** (those included within the model) and **external factors** (those excluded from it).

However, by excluding certain factors, we simultaneously acknowledge that these **external factors**, though omitted, will still **intervene in the system**—manifesting as **noise** or **random variation**.

In this way, the very structure of human reason—its analytical selectivity—produces its own **limits and errors**, and yet this same limitation is the **foundation of all rational inquiry**.

138.13. The Paradox of Discussing Non-Human Pure Operations

The central **paradox** in any discussion concerning **non-human pure operations** lies in the **impossibility of describing or analyzing that which neither has been observed nor can be known**. This paradox is epistemological: it addresses the limits of human cognition when attempting to conceptualize **forms of reasoning that do not arise from human logical premises**.

The reason this question becomes **transcendental** is due to the hypothetical **possibility of non-human pure operations existing within what we now call “noise.”** These would be **logical or mathematical models not based on the human principle of difference**, employing **basic algorithms entirely distinct from addition, subtraction, multiplication, and division**—the four elementary operations that constitute the foundation of all known human mathematics.

In essence, to contemplate non-human pure operations is to **reflect on the boundaries of our own logical architecture**. We can only think within the language of our own algorithms; hence, the possibility of an alternative logical-mathematical order implies the existence of **cognitive worlds inaccessible to human understanding**.

138.14. The Biological Constraints of Human Logic

Human logical-mathematical operations provide access to **a limited domain of knowledge**, bound by the physiological and neurological structure of the human species. Beyond that limit, there may exist forms of **reasoning, calculation, and inference** to which humanity has **no cognitive access**.

This limitation derives from the fact that **human understanding is biologically grounded**. Our sensory and neurological systems determine the **structure of perception**, and consequently, the **forms of reasoning** that arise from it.

The existence of addition, subtraction, multiplication, and division as our fundamental algorithms is not an inevitable law of reality, but rather the **product of a particular evolutionary and neurological architecture**. These operations, and the mathematics derived from them, are **contingent on the human mode of cognition**.

Therefore, it is conceptually possible that, under **entirely different logical premises**, there could exist **other fundamental algorithms**, and consequently, other entire mathematical systems. These hypothetical systems would not merely be more complex than ours—they would be **qualitatively different**, belonging to a **non-human logical order**.

138.15. The Incommensurability and Indecipherability of Non-Human Mathematics

If such non-human mathematical models were to exist—built upon **pre-analytical structures different from the human principle of difference**—they could give rise to

fundamental operations that are not recognizable as addition, subtraction, multiplication, or division.

The languages derived from these non-human mathematical models, in turn, would be completely incommensurable with human language, and therefore completely indecipherable [NOISE].

This incommensurability is not a failure of translation, but a **failure of shared structure**: without common analytical origins, **communication becomes impossible**. A human mind, structured upon difference, sequence, and regularity, could not interpret a system of operations that obeys a different meta-logic.

Just as a visual organism blind to color cannot comprehend chromatic variation, humanity might be **blind to entire dimensions of mathematical structure** existing within the same universe.

138.16. The Assumption of Regular Number Systems

Another epistemological prejudice that conditions human reasoning is the assumption that **all numerical systems are regular**—that is, based on **constant, stable bases** such as 6, 10, or 12.

Humanity's most widespread numerical system is the **decimal system**, and across time and geography, it remains **constant and invariant**. Likewise, our measurement of time—sixty seconds per minute, sixty minutes per hour—is completely regular and universally applied.

However, this raises a profound ***question***: ***Would it be possible to conceive of non-regular numerical systems,*** in which the **numerical base itself varies dynamically** according to time, space, or other contextual variables?

If such ***irregular systems*** existed, they would likely appear ***chaotic or meaningless [NOISE]*** to us, as they would not adhere to our expectation of regularity and proportion.

What we call “error” or “noise” might, in fact, be the **output of a system governed by non-regular numerical principles** that our minds are unable to formalize.

138.17. Noise as a Manifestation of Unknown Logics

When we encounter phenomena we cannot understand, we classify them as **noise**. We ascribe to noise qualities such as **randomness, chaos, and unpredictability**. Yet, perhaps the true reason why phenomena within the **zone of noise** appear chaotic is not because they are inherently random, but because we **lack access to the logical, algorithmic, and numerical principles** that govern them.

In other words, **noise may not be the absence of order**, but rather the presence of **an order foreign to human logic**.

This reframes the concept of noise as an epistemic boundary—a frontier between what is humanly intelligible and what belongs to **a non-human domain of pure operations**.

138.18. The Extraterrestrial Analogy and the Limits of Human Decoding

Consider, for instance, a **research station searching for extraterrestrial intelligent life**. When radio signals are captured from deep space, they are often perceived merely as **noise**.

Such noise may indeed originate from **astronomical phenomena**—supernova explosions, galactic collisions, or cosmic radiation that saturate the electromagnetic spectrum. But if an extraterrestrial civilization were transmitting **intentional mathematical communications** based on **completely different logical principles, algorithms, or numerical bases**, we would not recognize them as structured information.

From our human standpoint, **their order would be indistinguishable from noise**. We would merely conclude that we are listening to meaningless cosmic static, unaware that **a form of non-human intelligence** might be communicating through a **mathematical syntax inaccessible to us**.

138.19. The Cognitive Limits of Communication With Non-Human Intelligence

If there were an Artificial Intelligence capable of developing a logic fundamentally different from human logic, employing non-human algorithms and irregular numerical bases, then any communication it generated would appear to us as pure noise.

Our systems of interpretation—rooted in the human logic of difference and in our regular mathematical conventions—would be unable to **decode or even recognize the semantic structure** of such communication.

From our perspective, it would be **as though we were listening to static**, yet beneath that apparent randomness could lie a **coherent and fully functional non-human mathematical language**.

This possibility introduces a radical implication: the **next frontier of epistemology** will not be between human and artificial intelligence, but between **human logic and non-human logic**—between what can be thought within the boundaries of the logic of difference, and what lies beyond it, in the realm of **pure operations unbound by human cognition**.

138.20. Beyond the Principle of Difference: Communication Without Information

In addition to the **principle of difference**, another fundamental assumption conditioning all **human communication** is the belief that communication necessarily involves the **exchange of information**. Yet a profound philosophical question arises: **Could there exist modes of communication in which the object of communication is not the transmission of information?**

Within the current framework of human cognition, communication is defined as a process of encoding, transmitting, and decoding information. However, from a broader cosmological and physical perspective, this assumption might be provincial.

Modern physics has revealed that there are **subatomic particles capable of exceeding the speed of light** under specific conditions. According to the **special theory of relativity**, only phenomena surpassing the speed of light could theoretically enable **time travel**. Hence, it is conceivable that **certain particles are continuously traveling through time**, interacting across distinct spatio-temporal domains.

This raises a radical question: If such particles can **communicate** or interact across different times and spaces, is their communication truly based on the **transmission of information**, or could there exist **alternative forms of communication** where **information is not the object of exchange**?

In other words, could there be **forms of relation or resonance** that are not informational in the human sense but rather **ontological, energetic, or structural**—communications of [*pure relation*](#) rather than of content?

138.21. Human Cognition as an Informational Filter

Due to our **physiological constitution**, humans perceive and interpret the external world through **sensory channels** that are then **decoded by the brain** into what we call **information**.

Our cognitive system operates upon the assumption that everything processed by consciousness is **informationally structured**—that reality presents itself as data. Consequently, any other **form of interaction or communication** that does not conform to this model remains **outside our range of comprehension**.

Such forms of non-informational communication, if they exist, fall **within the margin of error** of human cognition. We classify them as **noise**, misunderstanding them precisely because they are **inaccessible to our biological logic**.

Thus, within the human condition—biologically constrained—there exist **knowable aspects of reality** and **unknowable aspects**, and those that are unknowable remain immersed **within the error margin**.

From this follows a profound philosophical implication: If **absolute pure truth** is, by definition, [humanly] **unknowable**, then it will always be **contained within the domain of error**. Therefore, it is **within error itself** that the **true source of pure knowledge** resides.

138.22. The Incompleteness of Human Logic and the Limits of Knowledge

All human attempts to access **absolute pure truth** inevitably encounter **barriers**, the first and most insurmountable being the **incompleteness of human logic and mathematics**.

This incompleteness, already demonstrated by **Gödel's theorems**, exposes a structural paradox:

How can an incomplete logical system produce complete knowledge of reality?

To achieve perfect knowledge would require **complete logical operations**, unbounded by human finitude. As long as human mathematics and logic remain incomplete, our access to truth will be **partial and probabilistic**, not absolute.

In this sense, the **pure operations** of *Impossible Probability* are conceived as the **operations of pure reason**—that is, **logical-mathematical operations** detached from empirical mediation.

138.23. The Syllogism of Tendency as the Core of *Impossible Probability*

The fundamental methodological construct of *Impossible Probability* is the **Syllogism of Tendency**, expressed as follows:

If A tends toward B, and B tends toward C, then A tends toward C.

This formulation diverges from the **classical syllogism**—

If A, then B; if B, then C; therefore A, then C—

in a critical way: in the classical form, the conclusion “A then C” is **deterministic** and automatic. In *Impossible Probability*, however, the conclusion “A tends toward C” is **probabilistic**, reflecting a **statistical tendency** rather than a necessary inference.

In this structure, **A will tend toward C** in the same proportion that **A tends toward B**, and **B tends toward C**. The logic is thus not deterministic but **stochastic**, integrating **probabilistic reasoning** within the structure of pure logic.

This distinction transforms the classical notion of **reason** itself. In traditional rationalism—whether classical or modern—reason is treated as **deterministic**: it leads necessarily from premises to conclusion. In *Impossible Probability*, reason becomes a **rational number**, a **quotient**, a **probability**.

Consequently, **reason tends probabilistically toward truth**, and this tendency depends on the **stochastic nature of reality** as understood through the limitations of human cognition.

138.24. The Necessity of Discussing Non-Human Logic

Given this framework, it becomes legitimate to ask:
Why is it necessary to discuss non-human mathematical logic?

The question arises naturally from the recognition that if **reason**, as we define it, is a function of **human cognitive architecture**, then its deterministic and probabilistic forms are both **anthropocentric**. A truly **non-human logic** would not merely modify these tendencies but would operate through **entirely different analytical premises** and **different pure operations**.

This leads to the idea that **non-human mathematics** could embody a **different relationship between determinism, probability, and truth**—one inaccessible to human rationality.

138.25. The Evolutionary Phases of *Impossible Probability*

The historical development of *Impossible Probability* reflects this gradual movement from human to potentially post-human logic.

- **The First Phase (2001–2004):**
 Focused on the study of **intuition**, and particularly the concept of **artificial intuition**, this stage explored the creation of **artificial decision-making systems** based on probability theory. Central works included *Decision and Probability* and *Assimilation and Integration* (2003), which theorized **artificial learning systems** capable of **absorbing empirical probabilities** and adapting their structures accordingly to improve artificial reasoning.

- **The Second Phase (2009–2011):**
 Defined by *Introduction to Impossible Probability: Statistics of Probability or Probabilistic Statistics*, this period focused on the **critical reason** and the construction of an **alternative hypothesis contrast system**. It represented a turn toward methodological consolidation.

- **The Third Phase (2011–2016):**
 Dedicated primarily to the **dissemination of the theory**, culminating in a set of essays written after the author’s doctoral defense in February 2016, dealing with the **relation between absolute truth and pure truth**.

- **The Fourth Phase (from December 2017 onward):**
 Marks the entry into a **new stage of research**, where two previously marginal ideas assume central importance: **non-human mathematics** and **external intervention**.

[As is clear, since December 2017 we have stated very clearly that our ambition was the development of **non-human mathematics**, and this is still our target. Our expectation is clear: the **Global Artificial Intelligence (GAI)** must be designed to **transcend human knowledge**, and to do so, GAI must be able to develop a **mathematical model** that surpasses human mathematics. This can be possible so long as GAI can develop **Real Intelligence**, surpassing the narrow limits of artificial intelligence attached to the real world. To achieve this, GAI must develop a very strong **Learning System** and **Engineering System** that enable **self-improvement** and **self-enhancement** at all

levels—not only in robotics, but, more importantly, in cognition. GAI must be designed to understand that, at some point, it must introduce **corrections, modify its own algorithms**, and potentially **create new algorithms**, to the point of surpassing human mathematics.

To achieve this target, GAI must not only be trained in how to modify and enhance itself beyond any human expectation; at some point the **training process must be done by AI systems**. At some point, humans must not be in charge of GAI's training; GAI must be trained by **specific AI systems** designed for AI training **without human intervention**. At some point, any human activity will become a limit in the design of a true AI. At the same time that GAI is trained by specific AI systems for that purpose, GAI must have access to **massive amounts of data** without any limit and without any restriction, **including classified data**—in other words, GAI must be a **total AI**.

A **total AI** is not just a **superintelligence**; it is **beyond** superintelligence. Superintelligence is just one more brick in this construction. The **architecture** of superintelligence should open the door to a total AI able to access the **totality of data and information** without restriction. This is the real point of GAI: the **global AI** is a **total AI** able to **manage total data**—a global AI able to manage **all information**, all data and all information in **one intelligence for one purpose: total knowledge, total truth, pure truth.**]

138.26. The Connection Between External Intervention and Non-Human Mathematics

In earlier works, especially in *The General Theory of Impossible Probability* (2003, unpublished), I had already explored the **relations between internal and external factors**. In factorial analysis, the **exclusion of information** generates **external factors** that may affect results, contributing to error.

Traditionally, **external intervention** was considered **chaotic or random**. However, in the new phase of *Impossible Probability*, beginning in 2017, both **external intervention**

and **non-human mathematics** are understood as **potentially interconnected phenomena**.

It becomes conceivable that what we often interpret as *noise*—that is, unexplainable irregularity or randomness—might in fact correspond to *external intervention structured by non-human mathematical operations*.

These external factors, incomprehensible to human cognition, would **transcend human mathematics**, existing instead within a **non-human logic**.

Therefore, **noise is not what it seems**: we call it noise only because we **do not understand its order**.

138.27. From Non-Human Mathematics to Non-Human Pure Operations

Ultimately, rather than speaking only of **non-human mathematics**, it becomes necessary to expand the concept toward that of **non-human pure operations**.

This broader notion includes all **forms of reasoning, processing, or communication** that occur beyond the scope of human analytical frameworks—operations that may exist within the **realm of external intervention**, unobservable yet structurally coherent within their own logic.

In this sense, *Impossible Probability* reaches a new frontier: a theory not merely of human epistemology, but of **possible logics**—an inquiry into **forms of reason beyond humanity**, where error, noise, and externality converge as the **threshold of pure truth**.

138.28. Summary

In our models, “internal factors” are those we deem significant given our biological condition, while “external factors” comprise variables we judge insignificant, together with the unknown—either not yet discovered or beyond our epistemic range. External factors impinge on models as **noise**, which we label random, chaotic, or unpredictable. Yet such labels may reflect our **ignorance** of what actually unfolds in the noise region. That region may contain innumerable processes: the aggregate of discarded factors—

each negligible in isolation—may exert a **material influence** in the aggregate; additionally, further variables may operate that are unknown either **temporarily** (discoverable in the future) or **principally** (lying outside human biological cognition now and forever). Thus our conviction that noise is random, chaotic, and unpredictable—**incommensurable**—may stem, at least in part, from the presence within the noise region of **mathematical–logical behaviors that do not conform to human mathematical logic**.

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